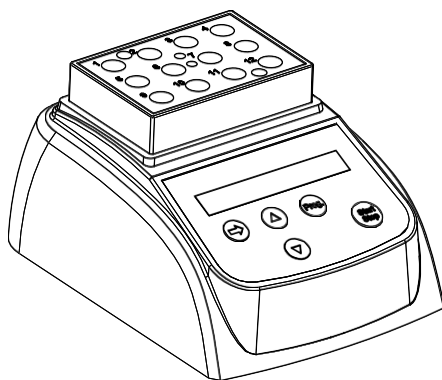




# Operation Manual

## Small Format Digital Dry Block Incubator

Catalog No. INCUBATOR



Thank you for purchasing the Digital Dry Block incubator (catalog no. INCUBATOR) from Hygiena.

## **Opening Check**

Please check the instrument when you first open the instrument packing case. If you find there is something wrong or missing with the instrument, contact Hygiena at [www.Hygiena.com](http://www.Hygiena.com). A list of included parts can be referenced in section 1.1

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## 1. Introduction

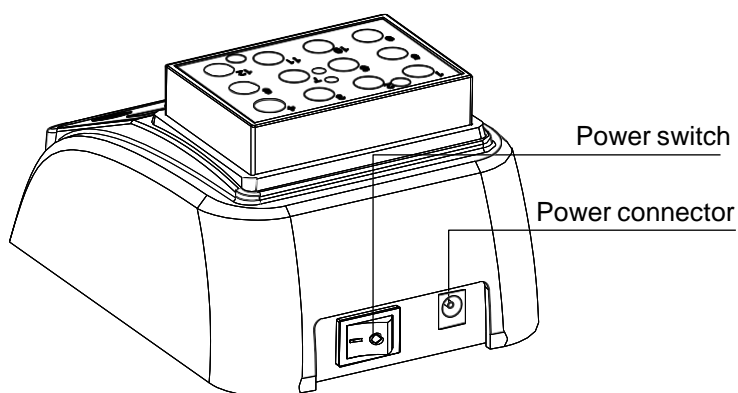
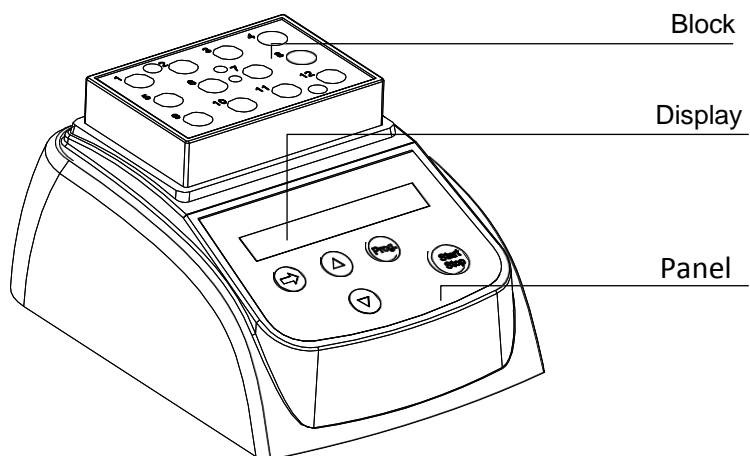
This manual contains operational instructions, please read the entire manual thoroughly before using the incubator.

### 1.1 What is in the box?

When you unpack the incubator, make sure you have the following parts:

No	Item	Type	QTY
1	Incubator	INCUBATOR	1
2	Power adapter and cord	12V 4A	1
3	Wrench		1
4	Operation manual		1
5	Certificate of certification		1

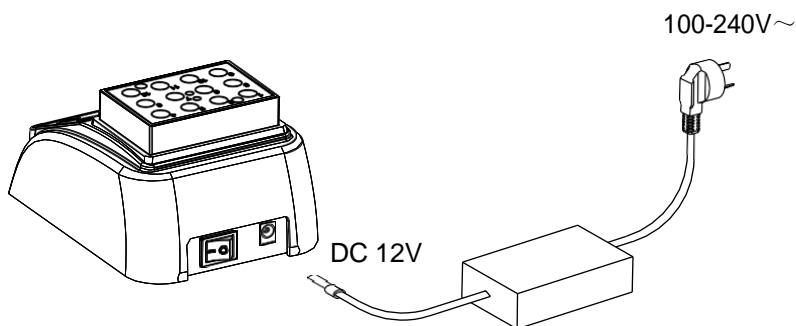
## 1.2 Incubator diagram



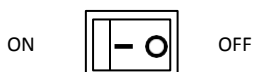
## 1.3 Set up the incubator

1.3.1 Place the incubator onto a level, horizontal surface.

1.3.2 Connect the incubator to the power adapter, connect the adapter to the power cord, and connect the power cord to a main power supply.



1.3.3 To power **ON** the incubator, turn the power switch to "I". The incubator is ready to operate when the display becomes visible.



## 2. Technical data

<b>Model</b>	<b>INCUBATOR</b>
<b>Power supply</b>	<b>DC12V</b>
<b>Power</b>	<b>35 W</b>
<b>Temperature range</b>	<b>RT+5 °C ~ 80 °C</b>
<b>Timing range</b>	<b>1sec ~ 999 sec or 1min ~ 999 min</b>
<b>Accuracy of the temperature</b>	<b><math>\leq \pm 0.5^{\circ}\text{C}</math></b>
<b>Display accuracy</b>	<b>0.1°C</b>
<b>Heating time (from 20 to 80</b>	<b><math>\leq 12\text{min}</math></b>
<b>Ambient temperature</b>	<b>5°C ~ 35°C</b>
<b>Dimensions (W×D×H)</b>	<b>110mm×150mm×80mm</b>
<b>Weight</b>	<b>0.5 kg</b>

### 3. Safety precautions



Read the manual thoroughly before operation.



This product is for indoor use only.



The operator should not open or attempt to repair the instrument, which will result in loss of repair guarantee or could cause an accident. If there is an issue with the instrument, contact Hygiena.



The instrument should be operated in an environment with low temperature, little dust, no water and away from the sun or heat lamp. The area should have good airflow, no corrosive gas or a strong disturbing magnetic field. It should be far away from central heating, camp stoves and any other heat resource.



The power switch is on the rear of the device, push “I” to power ON the device, and push “O” to power OFF the device.



The power connector is on the rear of the device, DC12V input, inside is “+”, outside is “-”.



Power **OFF** when not in use.

For extended non-use, remove the connector plug and cover incubator to shield from dust.



## 4. Operation guide

### 4.1 Control keys:

**START/STOP** ..... start or stop the procedure

**Prog.** ..... select various programs

**▲▼** ..... for setting temperature and time

**➡** ..... move the cursor

### 4.2 Create a new program

Press the “Prog.” key to select various programs, from P1 to P9.

For example, select P8, then press the ➡ key to move the cursor, press the ▲▼ keys to set a new value.

Users can set two temperatures and times for each program. The single ■ symbol, is the first temperature and time, the double ■ symbol is the second temperature and time.

Press the ➡ key to all the way to the right end of the display screen to toggle between first and second temperature and times.

In 8 seconds, the cursor will disappear exiting the setting interface.

See the example diagram below:





P8 50.0 003min ■ ➡ First temperature and time

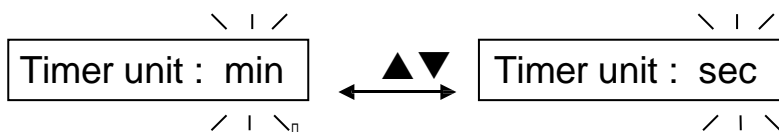
P8 40.0 006min ■ ■ ➡ Second temperature and time

**\*In 8 seconds the cursor will exit the setting interface.**

P8 36.2 °C NOTOK ➡ Shows Room temperature

### 4.3 Select minute or second as unit of time for timer

The timer unit of time can be set to either minute or second. To set the unit of time, press the  key to enter setting interface, release, then hold the  key for 2 seconds. Press the  to select min. or sec. then press the  key to confirm.

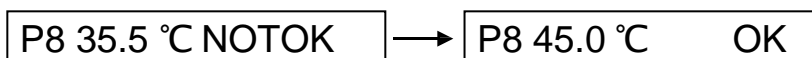


### 4.4 Run and stop a program

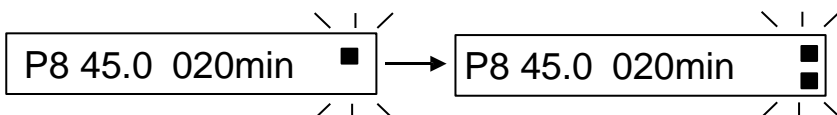
#### 4.4.1 Press the “Prog.” key to select the program.

The instrument starts to heat automatically according to the previously set temperature.

#### 4.4.2 It shows “NOTOK” on the display as it is heating up. When the target temperature is reached, the display screen shows “OK.” Then press the START/STOP key to run the timer.

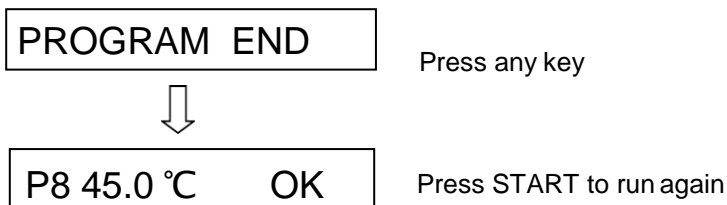


\* **NOTE:** When the first timing at the first temperature is complete, the second temperature automatically begins.



4.4.3 When the second time reaches 0, the buzzer alarms and the display will read “PROGRAM END”. The second temperature will be maintained. Press any key to return, or press the START key to run again.

4.4.4



4.4.5 Press the “START/STOP” key for 1 second to stop the program.

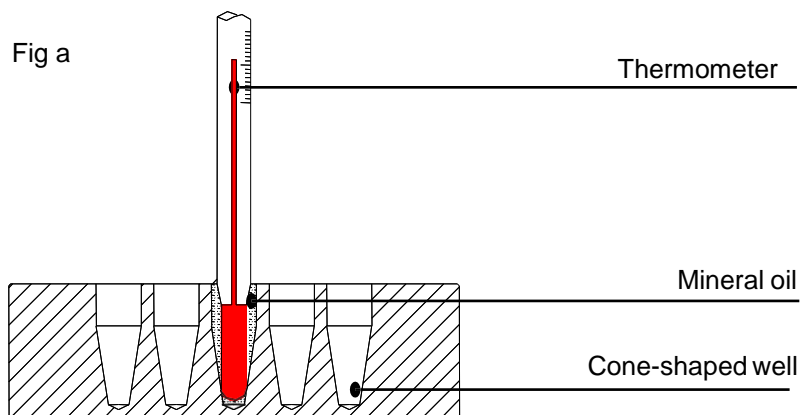
## 4.5 Temperature calibration

The temperature of the instrument has been calibrated at the factory. **If there is deviation between the actual temperature and the displayed temperature, the calibration steps in section 4.5.1 may be followed.** The Instrument uses double temperatures adjustment to ensure its accuracy. This means it is linearly calibrated on 40 °C and 80 °C (two points). The temperature veracity will be within  $\pm 0.5$  °C after the double temperature adjustment. The ambient temperature should be lower than 35 °C when starting temperature calibration.

#### 4.5.1 Calibration

After the instrument is powered on, it will enter standby mode. Make sure both the ambient temperature in the room and the temperature displayed on the instrument are below 35 °C. If the temperature is higher than 35 °C, wait until the temperature is below 35 °C. In this example, an ambient and set program display temperature of 20.5 °C is used.

4.5.2 Inject olefin oil (mineral oil) into one of the cone-shaped wells, and then put a thermometer into the well. The precision of the thermometer should be within 0.1 °C and the temperature ball should be completely immersed into the cone-shaped well, incubate for 20 min. See Fig. a.



**Let the instrument sit for 20 min at the set temperature.**

4.5.3 After 20 min., Press the ▲ and ▼ keys simultaneously, the display temperature (in this example) will show 20.5 °C , and then begin to rise to 40.0 °C automatically. During this time, the \* sign will flicker. When the display temperature reaches 40.0 °C, the signs **ADJ** and \* will flicker together. Let the instrument incubate at 40.0 °C for 20 min.

**40.0°C Adj \***

4.5.4 After 20 min, the thermometer temperature can be matched with the display temperature. Read the actual temperature of the thermometer (in this example) it is 38.8 °C. Press the ▲ and ▼ keys to amend the display temperature value to 38.8 °C, and then press the “start” key to confirm.

”▼”



**38.8°C Adj \***

4.5.5 At this point the incubator temperature will begin to rise automatically until it reaches 80.0°C, the \* sign on the display will flicker. When the display temperature reaches 80.0°C, the signs **ADJ** and \* will flicker together. Let instrument Incubate at 80°C, for 20 min.

Press “Start”



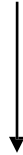
**80.0°C Adj \***



4.5.6 After 20 min, the thermometer temperature can be matched with the display temperature. Read the actual temperature of the thermometer (in this example) it is 79.0°C. Press the ▲ or ▼ key to amend the display value to 79.0, then press the “start” key to confirm.

”▼”

79.0°C Adj \*



Press “start”

4.5.7 The screen will return to the display as seen to the right.

P1 74.5 °C NOTOK

After temperature calibration, the temperature displayed is now the same as the temperature of the block.

#### 4.5.8. **Canceling Calibration**

During temperature calibration, press ▲ and ▼ key simultaneously to cancel the calibration. If canceled, the system will keep the former calibration.

## 5. Maintenance and cleaning

Block wells should be cleaned with a cloth dampened with alcohol



Power OFF the incubator when cleaning.



Do not drop cleaning liquid directly into the well when cleaning.

Do not use corrosive cleaning liquid.

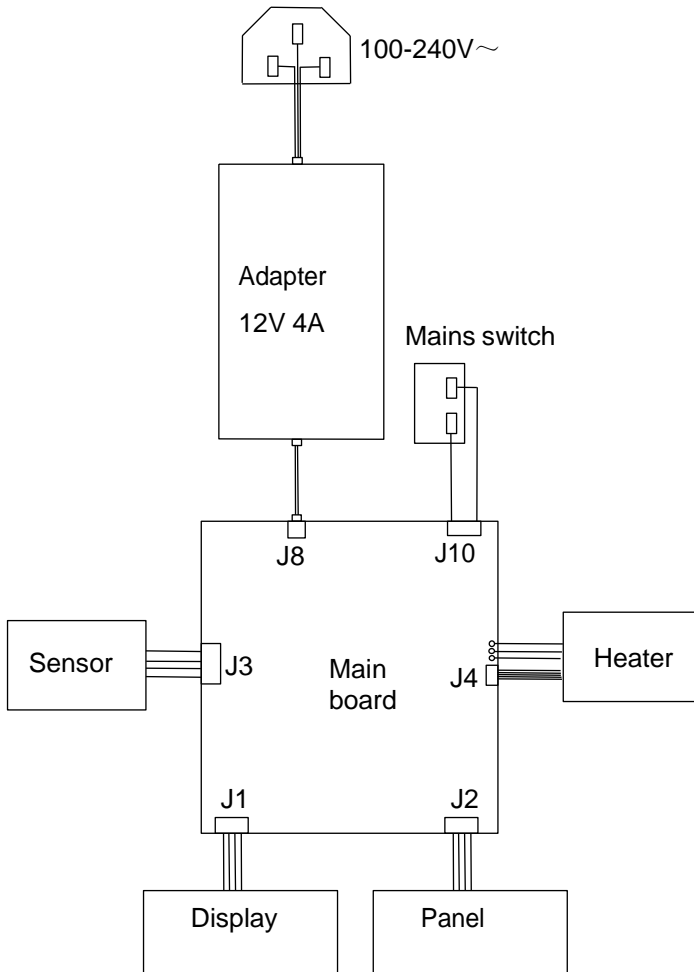
## 6. Troubleshooting Instrument Errors

Error	Cause	Solution
No display	No main power connection. Power failure.	Plug in main cable on both sides. Check the fuse
“OPEN” in the display with alarm	Broken sensor or loose contact of the module	Contact Hygiena for service.
“SHO” in the display with alarm	The sensor is short	Contact Hygiena for service.
No heating of the block	Heater failure	Contact Hygiena for service.
Press invalid	Keyboard failure	Contact Hygiena for service.

## Appendix

### Wiring Diagram for INCUBATOR

(For Reference Only)



### Questions?

Visit [www.Hygienea.com](http://www.Hygienea.com) for more information.

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